REMARKS

Claims 1-2, 11-12, 21-23, and 26-44 are in the application. New Claims 33-44 are added, comprising four sets of claims, each set comprising three claims, each set depending directly or indirectly from one of the four independent claims: Claims 1, 11, 26, and 29. Claims 33, 36, 39, and 42 are all identical (but for their dependencies), and are based on the disclosure in paragraph 0021. Claims 34, 37, 40, and 43 are all identical (but for their dependencies), and are based on the disclosure in paragraphs 0021 and 0026. Claims 35, 38, 41, and 44 are all identical (but for their dependencies), and are based on the disclosure in FIG. 1 and paragraphs 0020 and 0024.

Claims 1, 2, 11, 12, 21-23, and 26-32 are rejected under 35 USC 103(a) as being unpatentable over Misuda et al (EP 0 858 905 A1) in view of Kenichi (JP 02092642).

Misuda et al, cited by Applicants in an Information Disclosure Statement, disclose a recording medium comprising a porous outermost layer on a substrate, the porous outermost layer containing a particulate thermoplastic resin, and the particulate thermoplastic resin exhibiting a ΔE value of not higher than 20 after light exposure. The difference of glass transition temperature of the particulate thermoplastic resin from minimum film-forming temperature thereof may not be less than 10°C, and the minimum film-forming temperature is not lower than 50°C.

Kenichi, cited by Applicants in an Information Disclosure Statement, discloses an inkjet recorder including a thermal head for thermally fixing an ink composition after printing. Specifically, the dots are partly resolidified in a state of penetration into the fiber near the surface of a recording sheet.

Applicants' invention, as recited in Claim 1, is directed to

> 1. (original) In combination, (1) a thermal printhead and (2) an inkjet printhead, both mounted in an inkjet printer, said inkjet printhead configured for printing inkjet ink to form images on a sheet of print media, said print media including a sealable porous topcoat on an ink-receiving microporous layer, said thermal printhead adapted to seal said sealable porous topcoat by providing a source of heat to said sealable porous surface coat following said printing of images.

Independent claim 11 is to the same effect, but including a print medium that has a sealable porous surface:

> 11. (original) In combination, (1) a thermal printhead, (2) an inkjet printhead, both mounted in an inkjet printer, said inkjet printhead configured for printing inkjet ink to form images on a sheet of print media, and (3) said print media including a sealable porous surface coat on an ink-receiving microporous layer, said thermal printhead adapted to seal said sealable porous surface coat by providing a source of heat to said sealable porous surface coat following said printing of images.

Independent Claim 26 is similar to independent Claim 11, but specifies the pigment and binder of the ink-receiving layer and its porosity. Independent Claim 29 is also similar to independent Claim 11, but specifies the binder, pigment, and porosity of the topcoat.

The Examiner argues that Misuda et al teach all of the elements of Claims 1 and 11, but for the heating device, and further argues that Kenichi teaches a thermal printhead, which is mounted along with an inkjet head to heat the image being produced on a printing medium.

Applicants respectfully traverse the Examiner's argument as follows: Kenichi's thermal printhead is disclosed only for drying ink on paper (discussing penetration of ink into ***fiber*** of a recording sheet). There is absolutely no disclosure or suggestion that a heater suitable for drying ink on paper would also be suitable for sealing a sealable porous surface coat.

That this is not at all obvious is clear from Applicants' paragraph 0021, which discusses the prior art approach of applying a film comprising a thermal transfer overcoat to the print media after the image was printed and then fusing the film to the image with a heated roller that simultaneously applied pressure. Applicants' invention eliminates the pressure aspect of the prior art sealing scheme by providing a sealable porous surface coat through which the ink is printed to an underlying ink-receiving layer and which can be fused with heat only.

More specifically, heating that is sufficient to cause sealing of the topcoat must be above the glass transition temperature of the polymer particles that comprise the porous topcoat; see, e.g., paragraphs 0038-0039. There is no disclosure in Kenichi that his thermal printhead would be suitable for providing sufficient heat, above the glass transition temperature, to fuse the polymer particles and thereby seal the topcoat. All that can be said is that Kenichi discloses heating sufficient to dry the printed ink.

Thus, for at least these reasons, Claims 1, 2, 11, 12, 21-23, and 26-32 are considered to be patentable over the combination of the references.

New Claims 33-34 (depending directly or indirectly from Claim 1), 36-37 (depending directly or indirectly from Claim 11), 39-40 (depending directly or indirectly from Claim 26), and 42-43 (depending directly or indirectly from Claim 29) are directed to certain aspects of the fusion of the topcoat. Specifically, Claims 33, 36, 39, and 42 recite heating only the areas printed. Further, Claims 34, 37, 40, and 43 recite the height of the thermal printhead as a function of the swath height of the inkjet printhead divided by the number of passes the inkjet printhead makes. In this connection, paragraph 0026 specifies that the height (y dimension) must be "greater than or equal to" the distance from the top to the bottom nozzle of the thermal inkjet printhead divided by the number of passes. The language "greater than or equal to" supports the claim language of "at least equal to".

Misuda et al only disclose that "[t]he porous layer ... is made nonporous preferably by heating" (page 6, line 7). Nothing in this reference discloses heating to fuse only those areas that have been printed or the height of the heating element.

Likewise, Kenichi, as noted above, is silent about heating to fuse only those areas that have been printed. Further, Kenichi say nothing about the height of the heating element(s). Kenichi does indicate that the "ink image formed by the head is selectively heated and fixed" (Constitution). However, this in combination with Misuda et al would hardly suggest to one skilled in this art to fuse only the areas that have been printed or the height of the thermal printhead.

Thus, Claims 33-34, 36-37, 39-40, and 42-43 are considered to be patentable over the combination of the cited references for at least the foregoing reasons.

New Claims 35 (depending from Claim 2), 38 (depending from Claim 12), 41 (depending from Claim 27), and 44 (depending from Claim 30) are directed to the location of the thermal printhead positioned downstream of the inkjet printhead relative to the print zone.

Misuda et al are totally silent on how their porous layer is made nonporous, other than by a general statement that the porous layer is subjected to heat treatment.

Kenichi discloses one or two thermal printheads, which are axially aligned with the inkjet printhead and are configured to heat the printed ink immediately thereafter. In unidirectional printing, only thermal printhead 18a is employed, while in bidirectional

printing, the head 18a is heated at the time of rightward printing, while the head 18b is heated at the time of leftward printing.

Such heating following printing of ink images is desirable for drying ink, which is the stated purpose of Kenichi. However, such heating would be detrimental in the case of fusing a sealable porous surface coating, since it would dry the ink before the ink has had an opportunity to penetrate into the ink-receiving layer.

Applicants' placement of the thermal printhead downstream of the inkjet printhead relative to the print zone affords the ink ample opportunity to penetrate into the ink-receiving layer before the topcoat is sealed.

Thus, Claims 35, 38, 41, and 44 are considered to be patentable over the combination of the cited references for at least the foregoing reasons.

Reconsideration of the rejection of Claims 1-2, 11-12, 21-23, and 26-32, together with new Claims 33-44, under 35 USC 103(a) as being unpatentable over Misuda et al in view of Kenichi is respectfully requested.

The foregoing amendments and arguments are submitted to place the application in condition for allowance. The Examiner is respectfully requested to take such action. If the Examiner has any questions, he is invited to contact the undersigned at the below-listed telephone number. HOWEVER, ALL WRITTEN COMMUNICATIONS SHOULD CONTINUE TO BE DIRECTED TO: IP ADMINISTRATION, LEGAL DEPARTMENT, M/S 35, HEWLETT-PACKARD COMPANY, P.O. BOX 272400, FORT COLLINS, CO 80527-2400.

Respectfully submitted,

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